

NOTE

If the stopper arm does not move, the bolt is not centered through the stopper arm, washer or spring. Loosen the bolt and reinstall it.

3. Install the dowel pin (D, **Figure 70**) into the shift drum hole if it was removed.
4. Pry the stopper arm away from the shift drum, then install the drum shifter cam (C, **Figure 69**) onto the dowel pin and shift drum. Release the stopper arm.
5. Apply medium strength threadlock to the cam bolt threads and install it (A, **Figure 69**). Tighten the bolt to 23 N•m (17 ft.-lb.).
6. Install the gearshift plate assembly (A, **Figure 68**). Align the master splines on the plate hub and sub-gearshift spindle. Fit the spring ends around the crankcase stud (C, **Figure 68**).
7. Install new O-rings onto the oil transfer pipe (**Figure 79**). Lubricate the O-rings with engine oil, then install the oil pipe (C, **Figure 67**), bolt (B) and bracket (A).
8. Install the rear crankcase cover as described in this chapter.
9. Install the change clutch and centrifugal clutch assemblies (Chapter Six).
10. Install the clutch cover (Chapter Six).
11. Install the engine as described in this chapter.

REVERSE SHAFT ASSEMBLY

The reverse shaft assembly consists of the reverse control lever and shaft assembly mounted on the back side of the engine.

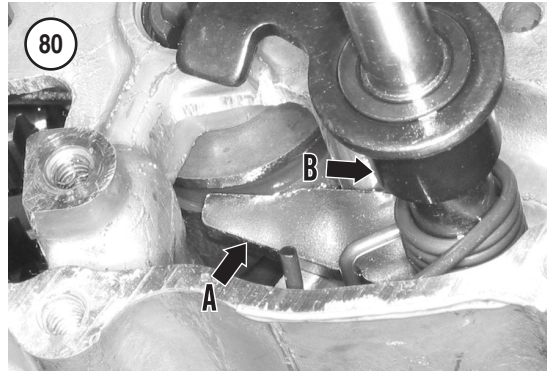
Removal/Inspection/Installation

1. Remove the engine from the frame as described in this chapter.
2. Remove the rear crankcase cover as described in this chapter.
3. On FM and TM models, remove the washer from the reverse shaft.

NOTE

*FE and TE models are shown in **Figure 80**. FM and TM models are similar.*

4. Hold down the reverse arm (A, **Figure 80**) with a screwdriver, then remove the reverse shaft (B) assembly.
5. On FE and TE models, the reverse shaft assembly is only available as a unit assembly. Inspect the reverse shaft assembly (**Figure 81**) for:
 - a. Weak or damaged spring.
 - b. Damaged reverse shaft.
6. On FM and TM models, inspect the reverse shaft assembly (**Figure 82**) for:
 - a. Weak or damaged spring.
 - b. Damaged reverse shaft.
 - c. Damaged circlip groove.
7. Install the reverse shaft assembly by reversing the preceding removal steps while noting the following:
 - a. When installing the reverse shaft (B, **Figure 80**), insert the end of the reverse arm (A) into the shift drum groove.
 - b. Position the bottom leg of the spring against the crankcase bottom (**Figure 83**), then push the lower spring end inward so the spring end is flat against the crankcase.



OIL PUMP

The oil pipes and oil pump assemblies are mounted on the front side of the engine. The oil pump consists of two stages. One side of the pump transfers oil from the bottom of the crankcase to an oil chamber in the crankcase. The remaining side of the pump forces oil from the oil chamber to the engine components.

The oil pump can be removed with the engine mounted in the frame. The following illustrations depict the engine removed for clarity.

Refer to **Figure 84**.

Removal/Installation

1. Remove the front crankcase cover as described in this chapter.

NOTE

Clutch removal is not necessary, but the clutch was removed in the following illustrations for clarity.

2. Remove the oil transfer pipe retaining bracket (A, **Figure 85**). Remove the retaining bolt (B), then remove the oil pipe (C).



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